

Work Order ID 111664

January-17-14 9:48:31 AM

111664

Page 1

Item ID: D4807-041

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Support Assembly

Start Date: 1/17/14 Start Qty: 2.00 ***2***

Cust Item ID:

Required Date: 1/31/14 Req'd Qty: 2.00 ***2***

Customer:

Reference:

Approvals: Process Plan: MLS Date: 14-01-17

Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____

SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D4807

Rev A. [Signature]

105

105

Outsource5

Outsource process - Machining

Memo

Issue P/O: 226666

Machine as per Dwg D4807

Possible Supplier: Archer Precision

Conformity sheet required

and Material Certs for material supplied

0.00

0.00

CL 14/01/17 (2)

110

Receive & Inspect for Damage & Mat'l Certs

0.00

110

Packaging

Memo

Ensure certificate of conformity is attached

0.00

14/3/31 (3)

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
--	--	---	--

Work Order ID 111664

January-17-14 9:48:31 AM

111664

Page 2

Item ID: D4807-041

Revision ID:

Item Name: Support Assembly

Start Date: 1/17/14

Start Qty: 2.00

2

Required Date: 1/31/14

Req'd Qty: 2.00

2

Reference:

Accept

N900040100

Setup Start

NS1

Stop

NS2

Cust Item ID:

Customer:

Approvals:

Process Plan:

Date:

QC:

Date:

Tooling:

Date:

SPC (Y/N):

Date:

Run Start

NR1

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

120

QC6- Inspect dimensions to drawing

0.00

27

9-89

0.00

14/3/31

3

120

QC

Memo

Quality Control

124

0.00

0.00

CL14/04/04 3

124

Purchasing

Memo

Purchasing

Issue P/O FOR LIQUID PENETRATION

P/O #: 23631

Certificate of conformity is required

P/O: 23701

CL14/04/08 3

125

Receive & Inspect for Damage & Mat'l Certs

0.00

0.00

125

Packaging

Memo

Packaging

ENSURE NDT RESULT IS ATTACHED

14/4/4 (3)

14/4/4 (3)

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
--	--	---	--

Work Order ID 111664

January-17-14 9:48:31 AM

111664

Page 3

Item ID: D4807-041

Revision ID:

Item Name: Support Assembly

Start Date: 1/17/14

Start Qty: 2.00

2

Required Date: 1/31/14

Req'd Qty: 2.00

2

Reference:

Accept

N900040100

Setup

Start

NS1

Stop

NS2

Cust Item ID:

Customer:

Approvals:

Process Plan: _____

Date: _____

QC: _____

Date: _____

Tooling: _____

Date: _____

SPC (Y/N): _____

Date: _____

Run

Start

NR1

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

126

126

Small Fab

Memo

Small Fab

INSERT BUSHINGS AS PER NOTE 8 & 9

0.00

0.00

3

FF 14-04-09

127

127

QC

Quality Control

QC5- Inspect part completeness to step on W/O

Memo

0.00

0.00

DAS
30
9-89

3

14604/09

130

130

Packaging

Packaging

Identify as per dwg & Stock Location: 5T144

Memo

0.00

0.00

3x

DAS
28
9-89

APR 10 2014

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
--	--	---	--

Work Order ID 111664

January-17-14 9:48:31 AM

111664

Page 4

Item ID: D4807-041

Revision ID:

Item Name: Support Assembly

Start Date: 1/17/14

Start Qty: 2.00

2

Required Date: 1/31/14

Req'd Qty: 2.00

2

Reference:

Accept

N900040100

Setup Start

NS1

Stop

NS2

Cust Item ID:

Customer:

Approvals:

Process Plan: _____

Date: _____

QC: _____

Date: _____

Tooling: _____

Date: _____

SPC (Y/N): _____

Date: _____

Run

Start

NR1

Stop

NR2Sequence ID/
Work Center IDOperation
Description

140

QC21- Final Inspection - Work Order Release

140

QC

Memo

Quality Control

Set Up/
Run Hours

0.00

0.00

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

MLJ 14-04-11

① 14-04-10

RD5429

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
--	--	---	--

Picklist Print

January-17-14 9:48:35 AM

Page 1

Work Order ID: 111664

111664

Parent Item: D4807-041

D4807-041

Parent Item Name: Support Assembly

Start Date: 1/17/14

Required Date: 1/31/14

Start Qty: 2.00

Required Qty: 2.00

Comments: IPP REV:A NEW ISSUE 14-01-16 JLM VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4807-1P		Purchased		No			Each	0.0000		2			
D4807-1P									**				
Support													
NAS75C6-009		Purchased		No			Each	0.0000		2			
NAS75C6-009									**				
Bushing													
NAS77C6-017		Purchased		No			Each	0.0000		2			
NAS77C6-017									**				
Bushing													

1914/3/31 (3)

3 FF 14-04-09

3 FF 14-04-09

M128 2485

M128 110

51277

51277

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

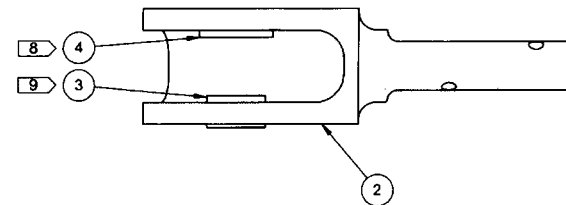
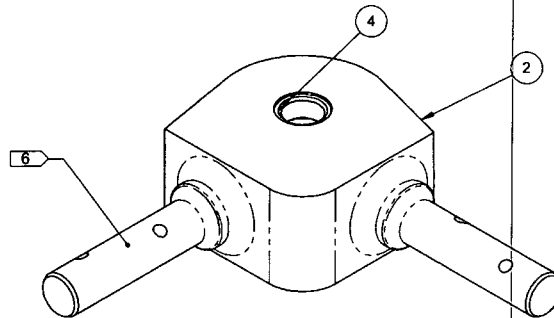
Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
--	--	---	--

ITEM NO.	QTY. -041	PART NUMBER	DESCRIPTION
1	X	D4807-041	SUPPORT ASSEMBLY
2	1	D4807-1	SUPPORT
3	1	NAS75C6-009	BUSHING
4	1	NAS77C6-017	BUSHING



111664 MLS
1401-17

D4807-041 SUPPORT ASSEMBLY

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.59 lbs
- 8) NAS77C6 BUSHING IS PRESS FIT
- 9) NAS75C6 BUSHING IS SLIDE FIT

A		NEW ISSUE		RF	13.09.16
REV.	DESCRIPTION			BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA		REV. A	
DRAWN	RF			SHEET 1 OF 2	
CHECKED	HS	DRAWING NO.		SCALE	
MFG. APPR.	JLM	D4807		NTS	
APPROVED	HS	TITLE		SCALE	
DE APPR.	DS	SUPPORT ASSEMBLY		NTS	
DATE		13.12.30		COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMPILED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

APPROVED

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

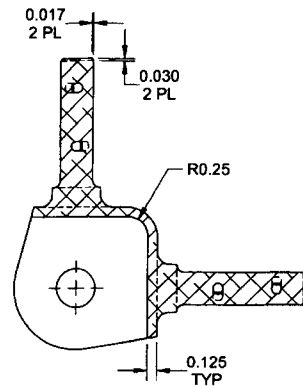
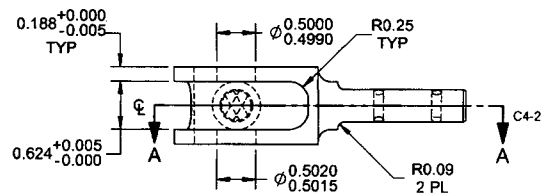
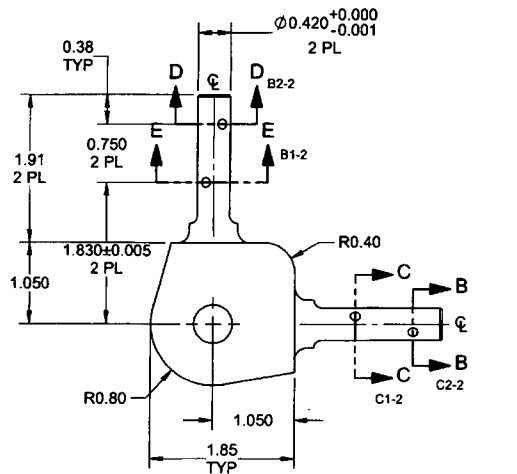
Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

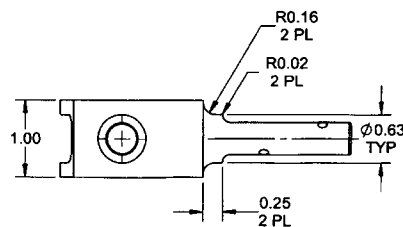
Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

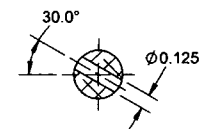
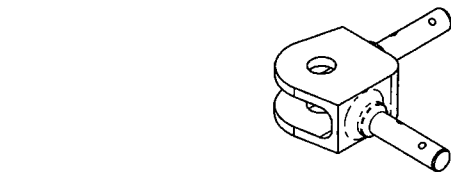
Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
--	--	---	--



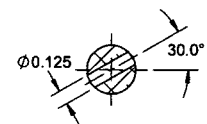
SECTION A-A B6-2



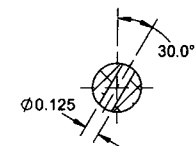
D4807-1 SUPPORT



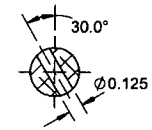
SECTION B-B C6-2



SECTION C-C C6-2



SECTION D-D D7-2



SECTION E-E D7-2

NOTES:

- 1) MATERIAL: 17-4 PH STAINLESS STEEL BAR, H900 CONDITION
PER AMS 5604/5643
DART SPEC M17-4-B
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: 0.57 lbs
- 8) LIQUID PENETRANT INSPECT PER QSI 038 6.1.1 (ASTM E1417 LEVEL 2)

APPROVED

DESIGN	RF
DRAWN	RF
CHECKED	HS
MFG. APPR.	JLM
APPROVED	HS
DE APPR.	DE
DATE	13.12.30

DART AEROSPACE LTD
HAWKESBURY, ONTARIO, CANADA

DRAWING NO. **D4807** REV. A
SHEET 2 OF 2

TITLE **SUPPORT ASSEMBLY** SCALE
NTS

COPYRIGHT © 2013 BY DART AEROSPACE LTD
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS
NOT TO BE USED FOR ANY PURPOSE OR COMBINED OR COMBINED TO ANY OTHER PERSON WITHOUT
WRITTEN PERMISSION FROM DART AEROSPACE LTD.

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width:100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
--	--	---	--



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO22666**

Purchase Order Date 1/17/2014

PO Print Date 3/28/2014

Page Number 1 of 1

Order From :

VC-GLO001

Ship To : DART AEROSPACE LTD

ARCHER PRECISION INC.
2228 GLADWIN CRESENT
OTTAWA, ON K1B 4S6
CA

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone 613 899 2405

Ship To Contact

Ship To Phone

Ship Via: FedEx PI collect

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

CAD

FOB

FCA - (Free Carrier)

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req. Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
----------	---	------------------------	---------------------------------------	----	--------------------------------	---------------	-------------------

1	D4807-1P	Support	2/28/2014 Yes 3/28/2014	FN	3.00 Each	\$990.46	\$2,971.38
---	----------	---------	-------------------------------	----	--------------	----------	------------

MACHINE AS PER DWG D4807 REV.A
B111664

MATERIAL SUPPLIED BY ARCHER PRECISION
MATERIAL CERTIFICATION REQUIRED (17-4 CONDITION H900 AS PER AMS 5604/5643)

extra piece made from material qty. changed from 2 to 3.

Line Total: \$2,971.38

PO Total: \$2,971.38

PO Instructions: Procurement Quality Clauses
A004 faa-pma/tso
A005 right of entry
A007 first article inspection
A016 personnel qualification
A026 certification of materila conformance
A041 notification of quality escape

CL

Note: Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100



2228 Gladwin Cresent

Ottawa, Ontario

K1B 4S6

Phone # 613-899-2405

Packing Slip

Date	Invoice #
3/28/2014	929

Ship To
Main Finished Goods Location Dart Aerospace 1270 Aberdeen Street Hawksbury, Ontario K6A 1K7

P.O. No.	Ship	Via	FOB	Project
22666	3/28/2014	delivered	Archer	

Qty	Item Code	Description
3	Sales	D4807-1P HST (ON) on sales



2228 Gladwin Cres.
Ottawa, Ont.
K1B 4S6

Telephone (613) 899-2405
Fax (613) 226-1719

Certificate of Compliance

To:
Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury Ont.
K6A 1K7

28 March 2014

Po Number	Part Number	Quantities
23325	D4807-1P	3

It is hereby certified that all articles mentioned above are in conformance with the requirements, specification and drawings as listed on customer purchase order number, 23325 issued by Dart Aerospace Inc.

Greg Kumpula
Quality Inspector
Archer Precision Inc.
2228 Gladwin Cress.
Ottawa, Ontario
K1B 4S6

THYSSENKRUPP MATERIALS NA

ARCHER PRECISION INC.

STAINLESS STEEL PLATE 17-4 STAINLESS
1.50" THICK X 4.2500" X 4.2500"
PART NO.

PO/Rel 503

Nous certifions que le document reproduit ici est
une copie conforme du rapport fourni par le
producteur du materiel ou les donnees resultant de


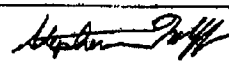
Certificate of Mill Test Results

BL VIM-422239-001

19Mar14

Pg 1/3

l'analyse faite par un laboratoire qualifie.
SIGNE PAR:

	Certificate of Test		 <small>Stephen Nolle - Director, Corporate Quality Assurance</small>															
	<table border="1"> <tr> <th colspan="2">Mill Information</th> <th>Customer Information</th> </tr> <tr> <td>Cert Number</td> <td>0118951-00</td> <td>Name</td> </tr> <tr> <td>Sales Order</td> <td>50-053-451</td> <td>PO</td> </tr> <tr> <td>Cert Date</td> <td>Jul-16-2013</td> <td>PO Date</td> </tr> </table>			Mill Information		Customer Information	Cert Number	0118951-00	Name	Sales Order	50-053-451	PO	Cert Date	Jul-16-2013	PO Date	<table border="1"> <tr> <td>500 Green Street Washington, PA 15301</td> <td> <table border="1"> <tr> <td>PO</td> <td>5400185809-R04</td> </tr> </table> </td> </tr> </table>	500 Green Street Washington, PA 15301	<table border="1"> <tr> <td>PO</td> <td>5400185809-R04</td> </tr> </table>
Mill Information		Customer Information																
Cert Number	0118951-00	Name																
Sales Order	50-053-451	PO																
Cert Date	Jul-16-2013	PO Date																
500 Green Street Washington, PA 15301	<table border="1"> <tr> <td>PO</td> <td>5400185809-R04</td> </tr> </table>	PO	5400185809-R04															
PO	5400185809-R04																	

Sold COPPER & BRASS SALES to: DIV THYSSENKRUPP MTRLS NA INC PO BOX 5116 SOUTHFIELD, MI 48086	Ship COPPER & BRASS ELKHART to: 1015 SAINT JEROME ST MISHAWAKA, IN 46544
---	--

Material Information

"ATI 17-4" PRECIPITATION HARDENABLE STAINLESS STEEL PMP HOT ROLLED PLATE ANNEALED PICKLED COMMERCIAL CUT EDGE	
ASTM-A-693-06 CND A/H900 AMS 5604F CND A/H900	ASME-SA-693-10 CND A/H900 UNS S17400

Piece Information

	Gauge	Width	Length					Total Wt
Pcs	(in)	(in)	(in)	Heat #	Piece ID	Section Id	Lot #	(lbs)
Item: 001 Cust-Id: SSFLR00085 Govt-Contract-#: Govt-DO-Rating: Cust-Job: ScheduleB:								
1	1.5000	48.0000	144.0000	839868	AB11604	---	425152	3040
1	1.5000	48.0000	144.0000	839868	AB11605	---	425152	3040

Chemistry Testing

Element	Requirements		Final Heat Analysis	
	Min	Max	839868	Loc
C	---	.07	.04	BN
MN	---	1.00	.48	BN
P	---	.040	.024	BN
S	---	.030	< .001	BN
SI	---	1.00	.22	BN
CR	15.00	17.50	15.49	BN
NI	3.00	5.00	4.76	BN
MO	---	.50	.20	BN
CU	3.00	5.00	3.24	BN
CB	.15	.45	.25	BN
TA	---	---	.010	TC
CBT	.15	.45	.26	BN
CBC	5.00	---	6.76	BN



Page 1 of 3

ALCT50 07/22/2013 13:15:16

From: ThyssenKrupp Materials NA

Cust. VIMETAL PECKOVER


Del.: 2403029235

CstAr

CstOr VIM-625115

Wgt.: 35 LB

Date 03/18/2014



THYSSENKRUPP MATERIALS NA

ARCHER PRECISION INC.

STAINLESS STEEL PLATE 17-4 STAINLESS
1.50" THICK X 4.2500" X 4.2500"
PART NO.

PO/Rel 503

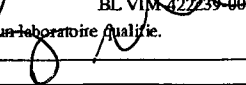
Nous certifions que le document reproduit ici est
une copie conforme du rapport fourni par le
producteur du matériel ou les données résultant de


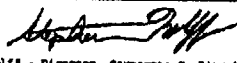
Certificate of Mill Test Results

BL VIM 427239-001

19Mar14

Pg 2/3

l'analyse faite par un laboratoire qualifié.
SIGNÉ PAR: 

 ATI Allegheny Ludlum	Certificate of Test		 <small>Stephen Wolff - Director, Corporate Quality Assurance</small>																	
	<table border="1"> <tr> <th colspan="2">Mill Information</th> <th>Customer Information</th> </tr> <tr> <td>Cert Number</td> <td>0118951-00</td> <td>Name</td> </tr> <tr> <td>Sales Order</td> <td>50-053-451</td> <td>PO</td> </tr> <tr> <td>Cert Date</td> <td>Jul-16-2013</td> <td>PO Date</td> </tr> </table>			Mill Information		Customer Information	Cert Number	0118951-00	Name	Sales Order	50-053-451	PO	Cert Date	Jul-16-2013	PO Date	<table border="1"> <tr> <td>500 Green Street Washington, PA 15301</td> <td> <table border="1"> <tr> <td>Name</td> <td>COPPER & BRASS SALES</td> </tr> <tr> <td>PO</td> <td>5400185809-R04</td> </tr> </table> </td> </tr> </table>	500 Green Street Washington, PA 15301	<table border="1"> <tr> <td>Name</td> <td>COPPER & BRASS SALES</td> </tr> <tr> <td>PO</td> <td>5400185809-R04</td> </tr> </table>	Name	COPPER & BRASS SALES
Mill Information		Customer Information																		
Cert Number	0118951-00	Name																		
Sales Order	50-053-451	PO																		
Cert Date	Jul-16-2013	PO Date																		
500 Green Street Washington, PA 15301	<table border="1"> <tr> <td>Name</td> <td>COPPER & BRASS SALES</td> </tr> <tr> <td>PO</td> <td>5400185809-R04</td> </tr> </table>	Name	COPPER & BRASS SALES	PO	5400185809-R04															
Name	COPPER & BRASS SALES																			
PO	5400185809-R04																			

Chemistry Testing

Allegheny Ludlum performs chemical analysis by the following techniques:
C, S by combustion/infrared; N, O, H by inert fusion/thermal conductivity;
Mn, P, Si, Cr, Ni, Mo, Cu, Cb, Co, V, by WDXRF; Pb, Bi, Ag by GFAA;
B by OES; Al and Ti (>=0.10%) by WDXRF, otherwise by OES.

839868 - Material was produced by EF melting with AOD refining.

CBC = Cb / C

CBT = Cb + Ta

Mechanical Testing

		LOT		LOT	
		425152		425152	
Condition:		ANNEALED		H900	
Direction:		TRANSVERSE		TRANSVERSE	
Temperature:		ROOM TEMP		ROOM TEMP	
Spec:					
Test Limit	Units	Result	Log	Result	Loc
HARDNESS	--	319. HBW	TC	43.0 HRC	WM
YIELD 0.2%	psi	---	--	171000.	WM
TENSILE	psi	---	--	194000.	WM
ELONGATION	%	---	--	17.	WM
RED OF AREA	%	---	--	57.	WM

When hardness is measured using the Brinell scale, the indentation measuring device is Type A.

"H", "TH", "RH", and other heat treated values are capability test results.

Mechanical Property Requirements

Condition:		ANNEALED		H900	
Direction:		TRANSVERSE		TRANSVERSE	
Temperature:		ROOM TEMP		ROOM TEMP	
Spec:					
Test Limit	Units	Min	Max	Min	Max
YIELD 0.2%	psi	---	---	170000.	---
TENSILE	psi	---	---	190000.	---

Page 2 of 3

AJCT20 07/22/2013 13:18:35

From: ThyssenKrupp Materials NA

Cust. VIMETAL PECKOVER

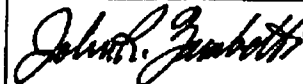
Del.: 2403029235

CstAr

CstOr VIM-625115

Wgt.: 35 LB

Date 03/18/2014



THYSSENKRUPP MATERIALS NA

ARCHER PRECISION INC.

STAINLESS STEEL PLATE 17-4 STAINLESS
1.50" THICK X 4.2500" X 4.2500"
PART NO.

PO/Rel 503

Nous certifions que le document reproduit ici est
une copie conforme du rapport fourni par le
producteur du matériel ou les données résultant de


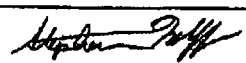
Certificate of Mill Test Results

BL VIM-42239-001

19Mar14

Pg 3/3

L'analyse faite par un laboratoire qualifié.
SIGNÉ PAR:

 ATI Allegheny Ludlum 500 Green Street Washington, PA 15301	Certificate of Test		 Stephen Wulff - Director, Corporate Quality Assurance
	Mill Information	Customer Information	
	Cert Number 0118951-00 Sales Order 50-053-451 Cert Date Jul-16-2013	Name COPPER & BRASS SALES PO 5400185809-R04 PO Date May-31-2013	

Mechanical Property Requirements

Condition:		ANNEALED		H900	
Direction:		TRANSVERSE		TRANSVERSE	
Temperature:		ROOM TEMP		ROOM TEMP	
Spec:					
Test Limit	Units	Min	Max	Min	Max
ELONGATION	%	---	---	10.	---
RED OF AREA	%	---	---	35.	---
HARDNESS	---	---	352. HBW	40. HRC	47. HRC

Metallography - General

Ferrite <= 5% per periodic test requirement.

Certification Statements

Allegheny Ludlum does not use mercury in the testing or production of its products.

Material is of USA melt and manufacture.

No welds/weld repairs performed.

knowingly and willfully recording any false, fictitious or fraudulent statement or entry on this document may be punished as a felony under Federal Statutes, including Federal Law, Title 18, Chapter 47.

Material is compliant with the European Union Directive 2011/65/EU - Restriction of Hazardous Substances (RoHS2).

DIN EN 10204:2005 3.1 Certificate

General Statements

TESTING WAS PERFORMED AT THE FOLLOWING LOCATIONS

BN = ATI-ALLEGHENY LUDLUM; 100 River Road; Brackenridge, PA 15014
TC = ATI-ALLEGHENY LUDLUM; 1300 Pacific Avenue; Natrona Heights, PA 15065
WM = WESTMORELAND MECHANICAL TESTING; 221 Westmoreland Drive; Youngstown, PA 15696

WARNING: Processing that makes fumes, dust, or solutions may cause lung disease. Please see MSDS for further information which has been supplied to your Purchasing Department. For an additional copy, please refer to our web site at www.atimetals.com/businesses/business-units/ludlum/pages/msds.aspx.

For access to online Certifications of Test, please register at www.atlextra.com.

The above is a true copy of the data on file. The material and test results conform to the sales contract and specification(s) as set forth in ATI Allegheny Ludlum's order acknowledgement. This certificate of Test may not be reproduced except in full without the written authorization of the company.

ATI Allegheny Ludlum's website contains a listing of material produced, general technical and contact information, and current quality and company accreditations including but not limited to ISO-9001, AS-9100, Nadcap, and ISO/IEC 17025. Please visit us at www.alleghenyludlum.com.

Page 3 of 3

NLC78E 07/22/2013 11:15:16

From: ThyssenKrupp Materials NA

Cust. VIMETAL PECKOVER


Del.: 2403029235

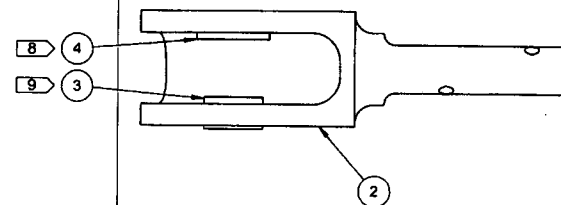
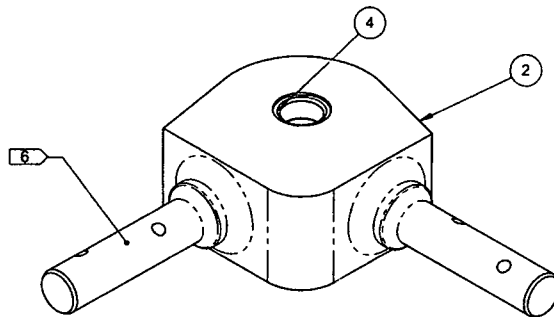
CstAr

CstOr VIM-625115

Wgt.: 35 LB

Date 03/18/2014





D4807-041 SUPPORT ASSEMBLY

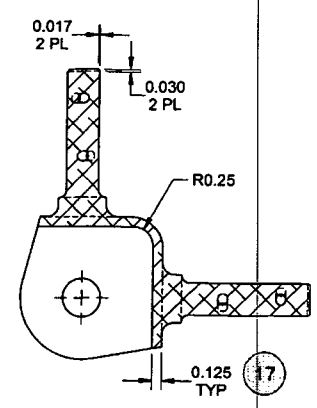
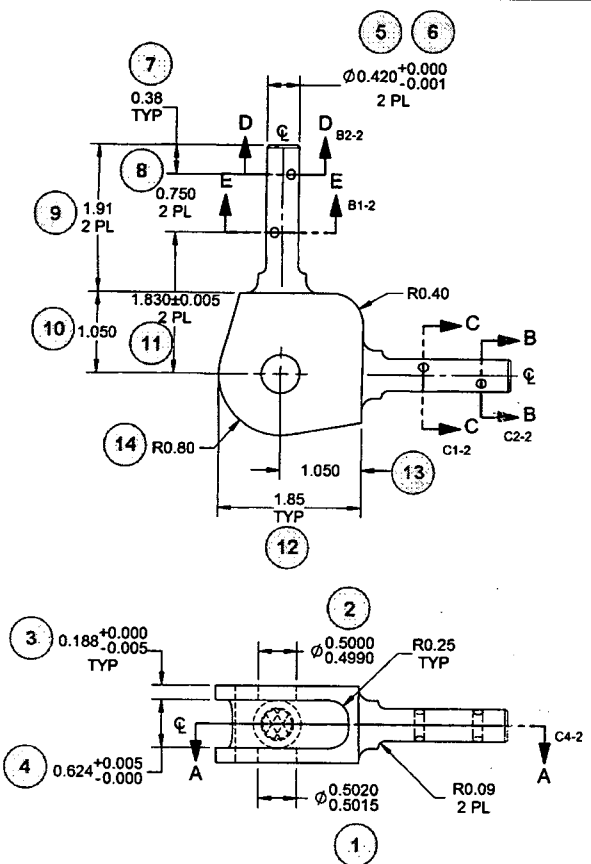
NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY PER QSI 044 6.1
- 7) WEIGHT: 0.59 lbs.
- 8) NAS77C6 BUSHING IS PRESS FIT
- 9) NAS75C6 BUSHING IS SLIDE FIT

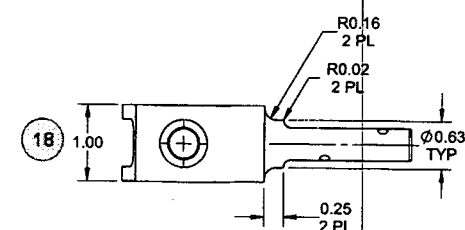
ITEM NO.	QTY. -041	PART NUMBER	DESCRIPTION
1	X	D4807-041	SUPPORT ASSEMBLY
2	1	D4807-1	SUPPORT
3	1	NAS75C6-009	BUSHING
4	1	NAS77C6-017	BUSHING

A		NEW ISSUE		RF	13.09.16
REV.		DESCRIPTION		BY	DATE
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
DRAWN	RF				
CHECKED	HS	DRAWING NO.		REV. A	
MFG. APPR.	JLM	D4807		SHEET 1 OF 2	
APPROVED	HS	TITLE		SCALE	
DE APPR.	DS	SUPPORT ASSEMBLY		NTS	
DATE		13.12.30		COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

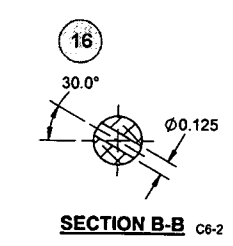
8 7 6 5 4 3 2 1



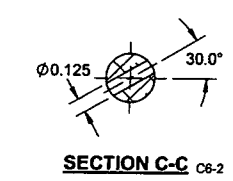
SECTION A-A B6-2



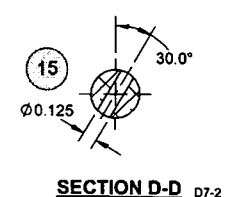
D4807-1 SUPPORT



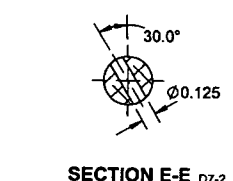
SECTION B-B C6-2



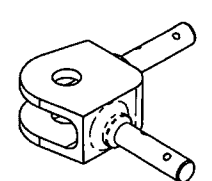
SECTION C-C C6-2



SECTION D-D D7-2



SECTION E-E D7-2



- NOTES:**
- 1) MATERIAL: 17-4 PH STAINLESS STEEL BAR, H900 CONDITION
PER AMS 5604/5643
DART SPEC M17-4-B
 - 2) FINISH: N/A
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: N/A
 - 7) WEIGHT: 0.57 lbs
 - 8) LIQUID PENETRANT INSPECT PER QSI 038 6.1.1 (ASTM E1417 LEVEL 2)

APPROVED

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	HS	DRAWING NO.	REV. A
MFG. APPR.	JLM	D4807	SHEET 2 OF 2
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	SUPPORT ASSEMBLY	NTS
DATE	13.12.30	<small>COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

8 7 6 5 4 3 2 1



Archer Precision

Short date 3/28/14

Plan Name D4807-1

Part No.: * u_prtnu *

Customer: * u_cus *

Rev.:

u_jobnum * u_jobnum *

u_qtynu

* u_qtynu *

Customer PO.: * u_Cuspo *

BSN: D4807-1P

u_mtl * u_mtl *

Incr. Smpl No.: 1

Name	ID	Actual	Nominal	pos Tol	neg Tol	Diff	<-- -->
1 - Dia_Cylinder1	D	0.50184	0.50175	0.50200	0.50150	0.00009	-
2 - Dia_Cylinder2	D	0.49888	0.49950	0.50000	0.49900	-0.00062	-0.00012
3 - Slot Top	Z	-0.19105	-0.18800	0.00000	-0.00500	-0.00305	-
4 - Slot Width	CartDist	0.62479	0.62400	0.00500	0.00000	0.00079	--
5 - Dia_Post 1	D	0.41968	0.42000	0.00000	-0.00100	-0.00032	-
6 - Dia_Post2	D	0.41923	0.42000	0.00000	-0.00100	-0.00077	--
7 - Post 1 End to Hole	CartDist	0.38368	0.38000	0.01000	-0.01000	0.00368	-
7 - Post 2 End to Hole	CartDist	0.38370	0.38000	0.01000	-0.01000	0.00370	-
8 - Cross Hole Distance	CartDist	0.74749	0.75000	0.00500	-0.00500	-0.00251	--
8 - Cross Hole Distance 2	CartDist	0.74740	0.75000	0.00500	-0.00500	-0.00260	--
9 - Post 1 Length	CartDist	1.91126	1.91000	0.01000	-0.01000	0.00126	-
9 - Post 2 Length	CartDist	1.90944	1.91000	0.01000	-0.01000	-0.00056	-
10 - Side 1	Y	1.04880	1.05000	0.00500	-0.00500	-0.00120	-
11 - Hole Distance 1	Y	1.82985	1.83000	0.00500	-0.00500	-0.00015	-
11 - Hole Distance 2	X	1.83108	1.83000	0.00500	-0.00500	0.00108	-
12 - Base Width 1	ResEle	1.84902	1.85000	0.01000	-0.01000	-0.00098	-
12 - Base Width 2	ResEle	1.85318	1.85000	0.01000	-0.01000	0.00318	-
13 - Side 2	X	1.05296	1.05000	0.00500	-0.00500	0.00296	-
14 - Dia	D	1.60044	1.60000	0.01000	-0.01000	0.00044	-
15 - Dia_Circle1	D	0.12505	0.12500	0.00400	-0.00100	0.00005	--
15 - Dia_Circle2	D	0.12515	0.12500	0.00400	-0.00100	0.00015	--
15 - Dia_Circle3	D	0.12516	0.12500	0.00400	-0.00100	0.00016	--
15 - Dia_Circle4	D	0.12509	0.12500	0.00400	-0.00100	0.00009	--
17 - Wall Thickness	CartDist	0.12452	0.12500	0.00500	-0.00500	-0.00048	-



skyservice
Air travel. Evolved.

NDT Work Order

Sky Service F.B.O. Inc.

DOT APP 53-89 / EASA 145.7142 / BDA AMO 385

WO #: YYZ

70265

Customer: DART AEROSPACE

Dept: NDT YYZ

Reference: 23631

Make:

Model:

Reg:

A/C S/N:

TSN:

CSN:

TSO:

Tail#:

Task: ☒ Scheduled ☐ Unscheduled ☐ A.O.G. ☐ P.T. ☐ M.T. ☐ E.T. ☐ U.T. ☐ R.T.

Work Required:

CARRY OUT NDT ON THE FOLLOWING ITEMS:

1) AFT CROSS TUBE - HIGH ITEM ID: D412-664-203

WORK ORDER ID 115204

2) AFT CROSS TUBE - HIGH ITEM ID: D412-664-203 WORK ORDER 115291

3) SUPPORT ASSY ITEM ID: D4807-041 W.O. 111664 QTY 3

Action Taken:

Date:

Initial/Stamp:

LIQUID PENETRANT INSPECTION CARRIED

OUT ON ITEMS LISTED ABOVE

03 APR 2014



AS PER ASTM E1417M-13

NO CRACKS FOUND

PENETRANT: ARDROX 970P25E BATCH # TPC10484

BLACK LIGHT: M20189

I certified that the maintenance described above has been performed with the applicable standard of airworthiness.

Signature:

ACA/SCA Stamp

Date:

Name: GARY SMITH



03 APR
2014



skyservice Work Order Traveler

Sky Service F.B.O. Inc.

Page: 1 of 2

DOT APP 53-89 / EASA 145.7142 / BDA AMO 385

WO #: MWO20484	Customer: Dart Aerospace Ltd.	Dept: NDT YUL	Reference: 23701
Descr:	PN:	S/N:	Qty: 1
Make:	Model:	Reg:	A/C S/N:
TSN: 0	CSN: 0	TSO: 0	
Task: UNSCHEDULED			Sequence: 1

Work Required:

CARRY OUT NDT INSPECTION (LIQUID PENETRANT) ON 23 MISC PARTS

ITEM ID: E4702-041 LADDER ASSY

1 - WORK ORDER ID#: 111875 (QTY5)

ITEM ID: E4706-041 SUPPORT ASSY

2 - WORK ORDER ID#: 111856 (QTY5)

ITEM ID: D4806-3 STUD

3 - WORK ORDER ID#: 115957 (QTY4)

ID#: D4807-041 SUPPORT ASSY

4 - WORK ORDER ID#: 111664 (QTY3)

ID#: D4882-1 STRUT

5 - WORK ORDER ID#: 115543 (QTY4)

ID#: D4883-1 END FITTING

6 - WORK ORDER ID#: 113533 (QTY4)

Action Taken:	Date:	Initial/Stamp:				
LIQUID PENETRANT INSPECTION CARRIED OUT ON ITEMS LISTED ABOVE (ITEMS 1-6) AS PER ASTM1417M-13 NO CRACK FOUND Pen: ZL-56 BATCH# 09H094 EXP. DATE: AUG 2014, DEV: SKD-S2 EXP. DATE: OCT2017 CLEANER: SKC-S EXP. DATE: APR 2018	APR 08 2014	 1				
Description	Location	P/N	Qty	Batch	S/N Off	S/N On

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

Signature:	ACA/SCA Stamp 	Date: APR 08 2014
Name:	ANTONINO MARCHETTA	